REMARKS

Claims 1-12 remain in the application. Claims 1, 6, and 8 have been amended. Reconsideration and allowance of claims 1-12 are respectfully requested.

Objection to the Drawings

In item 2 on page 2 of the Office Action, the drawings have been objected under 37 C.F.R. § 1.83(a) as not showing every feature of the invention specified in the claims. In particular, the Office Action stated that the feature "the AC current independent of the DC current" and the feature "alternating-current source and the direct-current source being integrated in a pulse generator" are not shown.

Claim 6 has been appropriately amended as to recite "alternating-current source and the direct-current source being integrated in one generator", thereby mooting one objection to the drawings.

According to MPEP § 608.02 (E8R3) (interpreting the second sentence of 35 U.S.C. 113), the Examiner should require drawings "wherein a drawing is not necessary for the understanding of the invention, but the subject matter sought to be patented admits of illustration".

By analogy, the same is believed to apply to the individual claim features where the claim feature admits of illustration. However, the claims feature "the AC current independent of the DC current" is a ***functional*** characteristic or feature, which, by its nature, does ***not*** admit of illustration. It is accordingly believed that the current drawings meet the requirements of 35 U.S.C. § 113 as interpreted in MPEP § 608.02 (E8R3) without the need for an amendment. Withdrawal of the objections to the drawings is respectfully requested.

Objection to the Claims

In item 3 on page 4 of the Office Action, claims 1 and 8 have been objected to because of informalities. In particular the Office Action states "the written disclosure does not explicitly support the claimed limitation of AC current independently imposed on the test structure".

The instant application states on page 6, lines 9-13, "the AC voltage source is set up in such a way that it exposes the conductive structure to be tested to an alternating current, ***independently*** of a direct current of the direct-current source", and in lines 31-32, "the alternating current being ***independent*** of the direct current" (emphasis added). Consequently, it is believed that the description explicitly supports the claim feature in issue.

In item 4 on page 4 of the Office action, claim 6 has been objected to because of informalities. The Examiner's comments have been considered and the appropriate corrections have been made to claim 6.

Accordingly, withdrawal of the objections to the claims is respectfully requested.

Prior Art Rejection of the Claims

In item 7 on page 5 of the Office action, claims 1-5 and 8-12 have been rejected by the Examiner under 35 U.S.C. § 103 as being obvious over *Ohmi* (US 5,291,142). In item 8 on page 8 of the Office action, claim 6 has been rejected by the Examiner under 35 U.S.C. § 103 as being obvious over in view of *Ohmi* in view of *Suzuki et al.* (US 6,223,686). In item 9 on page 8 of the Office action, claim 7 has been rejected by the Examiner under 35 U.S.C. § 103 as being obvious over *Ohmi* in view of *Schwarz et al.* (US 4,483,629)

The rejections and the Examiner's comments have been considered. Consequently, the independent claims have been amended to recite "the AC current ... superposed on the DC current" in an effort to even more clearly define the invention of the instant application. Support for this amendment can be found on page 10, lines 23-25, of the instant application.

Before discussing the prior art in detail, it is believed that a brief review of the subject matter of the claims would be helpful.

Claim 1 (similarly, claim 8) now recite, *inter alia*:

> a circuit having at least one conductive structure to be tested, which is electrically coupled to the DC source and the AC source, ... wherein the ***AC current*** is ***independent*** of the DC current and is ***superposed*** on the ***DC current***; and

(Emphasis added.)

More specifically, in the second paragraph on page 6 of the Office action, the Examiner has stated that:

> Although Ohmi does not explicitly disclose the second current supply means as being a voltage source. It is well known in the art that many AC currents are applied from AC voltage sources. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to specify the second current supply means as a AC voltage source for the purpose of supplying a current larger than the first electric current to heat the interconnect pattern under test (Column 2, lines 15-19).

(Emphasis added.)

Ohmi states in col. 4, lines 34-57:

> The method ... is explained by referring to FIG. 2. FIG. 2 represents resistance change of the interconnector when a first and a second current are ***repeatedly*** applied.
>
> A current ... is applied to the interconnector as a ***first*** current and an initial value of the resistance is obtained .... Then, ***the current is gradually increased to a second current*** so that the temperature of the interconnector rises to a prescribed value. ...
> ...
> After a ***second*** current ... is applied for a prescribed period, the ***current is dropped instantly to a first current***. The temperature of the interconnector decreases to that of coolant and therefore the resistance also decreases. The resistance becomes larger than the initial value as a result of electromigration.

(Emphasis added.)

The above-noted passage of *Ohmi* indicates that the first current and second current are not concurrent. *Ohmi* therefore does not disclose a concurrent, overlapping AC and DC current.

The passage of *Ohmi* cited by the Examiner (col. 3, lines 50-54) states:

> For the second current supply means, both DC and AC current supplies can be used. In the case of AC current supply, various types of AC such as sine wave, pulse or alternating current superimposed on DC current can be used.

Strictly speaking, this only state that the current supply for the ***second*** current (which is used for heating) can be AC, DC, or a combination thereof.

The invention in accordance with claims 1-12 uses an AC current for the heating and a DC current for the electromigration, wherein the ***AC current*** is ***independent*** of the DC current

and is ***superposed*** on the ***DC current***. *Ohmi* does not disclose (or suggest) these claim features. Therefore, the invention as recited in claims 1 and 8 of the instant application is believed not to be obvious over *Ohmi*. Claims 1 and 8 are, therefore, believed to be patentable over the prior art and because the dependent claims are ultimately dependent on either claim 1 or claim 8, they are believed to be patentable as well.

Considering the deficiencies of the primary reference *Ohmi*, it is believed not to be necessary at this stage to address the secondary references applied in the rejection of dependent claims 6 and 7, and whether or not there is sufficient suggestion or motivation with a reasonable expectation of success for modifying or combining the references as required by MPEP § 2143.

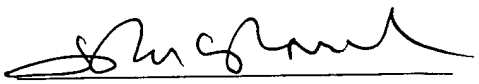
In view of the foregoing, reconsideration and allowance of claims 1-12 are solicited.

Specification

The Office Action has provided guidelines from 37 C.F.R. § 1.77(b) regarding arrangement of the specification including headings. Applicants respectfully note that the guidelines describe how the specification "should" be arranged and are not mandatory. Further, the content of the application stands on its own as filed and is submitted to be fully compliant with the Patent Act in all respects. Since no objection has been made to the Specification, no amendments are necessary and none have been made.

With this response, the application is believed to be in condition for allowance. Should the examiner deem a telephone conference to be of assistance in advancing the application to allowance, the examiner is invited to call the undersigned attorney at the telephone number below.

Respectfully submitted,



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